

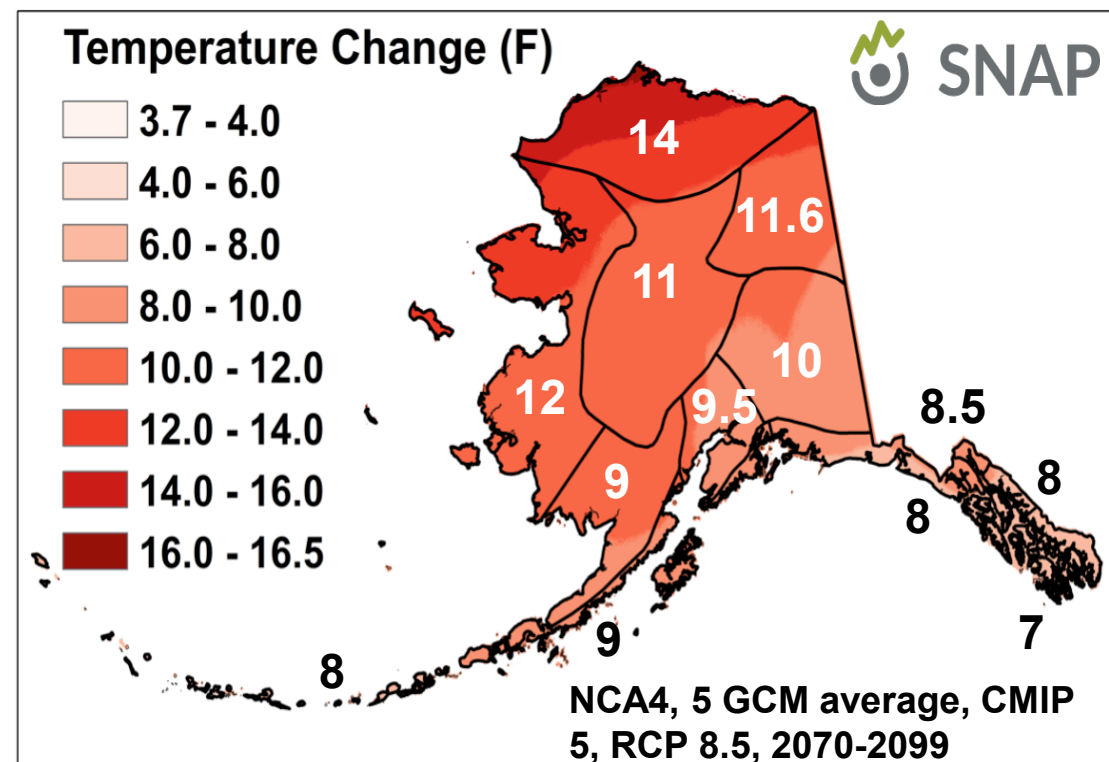
AKCASC: what we do, stakeholders we serve

- We work with users to develop climate information that helps stakeholders make decisions about **adapting to climate change and its impacts**.
- Federal management agencies and Alaska Native communities, but often engage state and other entities as well.
- USNPS, USFWS, USFS planning processes; community impacts and vulnerability assessments; adaptation plans

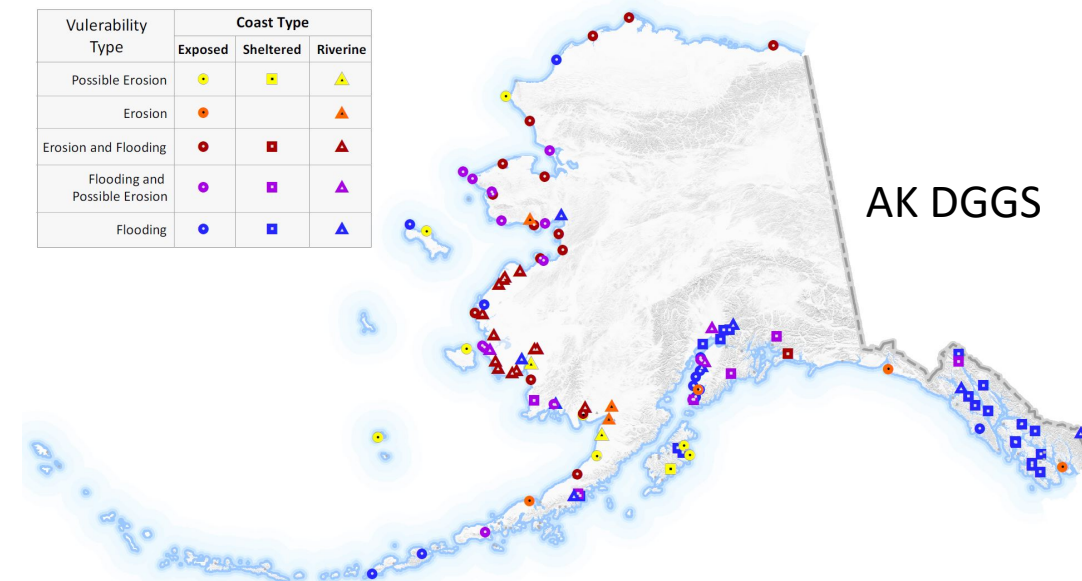


Stakeholder needs: hazards and planning / adaptation

- Ongoing: warming, trends, permafrost thaw / thermokarst, sea ice decline, erosion
- Episodic and related to extremes: drought, fire (and smoke), flooding, storms
- Interactions of “slow” and “fast” factors result in difficult to forecast impacts
 - Rapid erosion given storms + thaw + sea ice
 - Fire, insects, vegetation change, changing climate = transformational ecosystem change

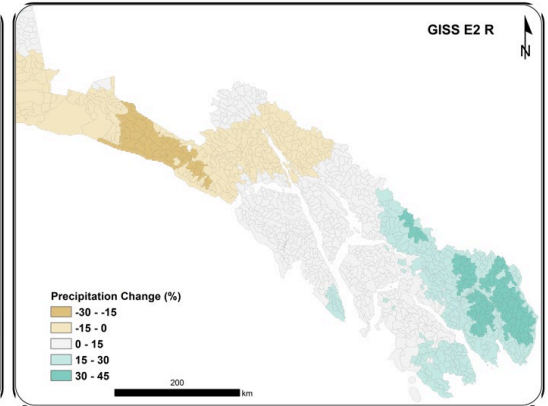
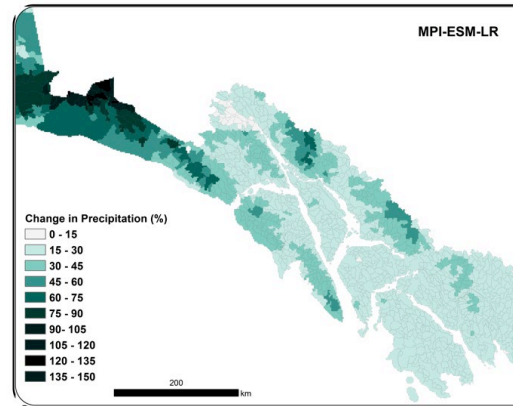
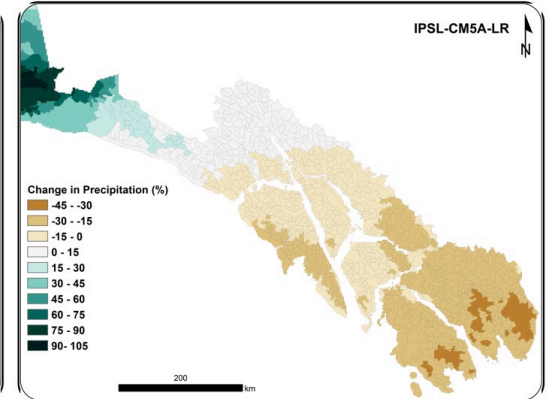
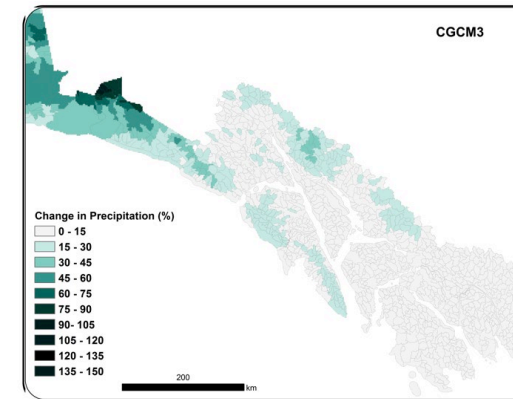
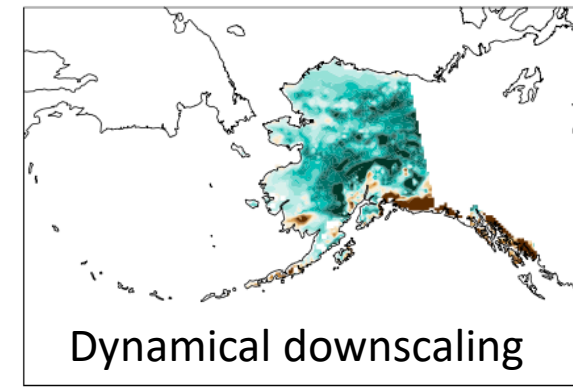
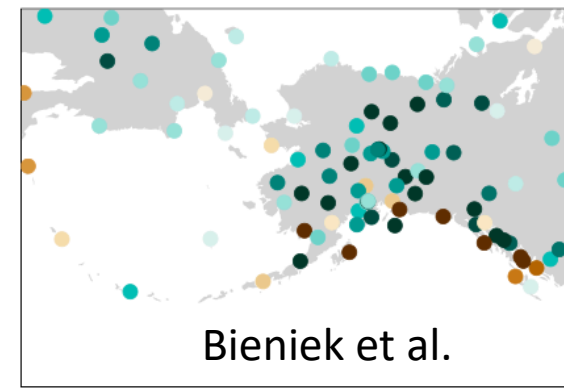


Vulnerability Type	Coast Type		
	Exposed	Sheltered	Riverine
Possible Erosion	●	■	▲
Erosion	●		▲
Erosion and Flooding	●	■	▲
Flooding and Possible Erosion	●	■	▲
Flooding	●	■	▲



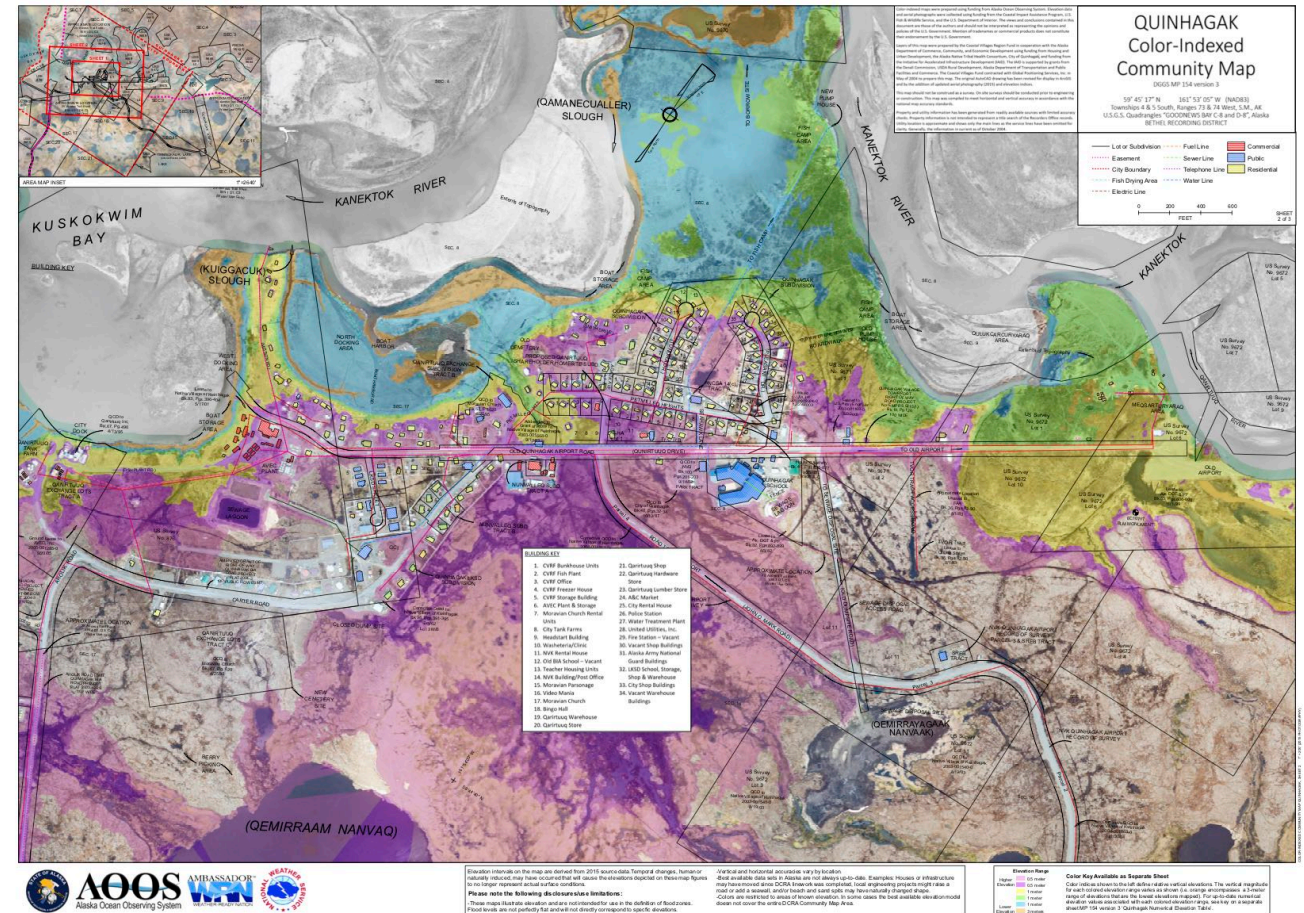
AKCASC and partners' use of weather and climate data

- Observed/interpolated climate data for **impacts models** and **downscaling climate**: temperature, precipitation, snowpack, pressure, wind, etc.
- Modeling attribution of climate impacts
 - Ex: infrastructure - permafrost thaw, river and coastal erosion
 - Ex: Access to subsistence resources - sea ice, river ice, rain on snow and caribou
- Time scales: hourly to centennial, communities to beyond state of Alaska.



Barriers to use: “useful” is more than “operational”

- Climate projections and impacts modeling are not forecasts – not probabilistic and require different translation.
- Are forecasts user centered? Academic process forecasts, or community engagement?
- Bandwidth (literally and figuratively): forecasts need to be tailored to a general usership without access to high speed internet.



- Where do you get the data/information?
 - UAF/SNAP, CMIP, NCEP, PRISM, USDA NRCS, USGS, NWS, Amazon AWS, collaborators
- What is the time range of weather forecasts that you need?
 - Seasonal to decadal!
- What would you like to have as weather/climate data that does not exist?
 - Observations over much more of the state
 - Basic climate and weather including extremes
 - Cryosphere: permafrost thaw and snow water equivalent
 - Erosion and storms
 - Vegetation-relevant drought metrics operationalized for users